

AMENDMENTS TO THE CLAIMS:

1. (currently amended) A method for synthesis of polynucleotides and/or polypeptides in a cell-free reaction mixture initially comprising a bacterial cell extract; a template for production of the polynucleotides and/or polypeptide; monomers for the polynucleotides and/or polypeptide to be synthesized, and such co-factors, enzymes and other reagents that are necessary for the synthesis; the method comprising:

synthesizing said polynucleotides and/or polypeptides in a cell-free reaction mixture modified to include:

at least 10 mM of a phosphate-free energy source; nucleoside monophosphates in the absence of exogenous nucleoside triphosphates; and exogenous inorganic phosphate salts at a concentration of at least about 1 mM.

2. (original) The method of Claim 1, wherein said phosphate free energy source is glucose.

3. (original) The method of Claim 1, wherein said phosphate free energy source is glutamate.

4. (original) The method of Claim 1, wherein said phosphate free energy source is pyruvate.

5. (currently amended) The method of Claim 1, A method for synthesis of polynucleotides and polypeptides in a cell-free reaction mixture initially comprising a bacterial cell extract; a template for production of the polynucleotides; monomers for the polynucleotides and polypeptide to be synthesized, and such co-factors, enzymes and other reagents that are necessary for the synthesis; the method comprising:

synthesizing said polynucleotides and polypeptides in a cell-free reaction mixture modified to include:

at least 10 mM of a phosphate-free energy source; nucleoside monophosphates in the absence of exogenous nucleoside triphosphates; and exogenous phosphate wherein said phosphate is present at a concentration of from about 1 mM to about 20 mM.

6. (currently amended) The method of Claim 5, A method for synthesis of polynucleotides and polypeptides in a cell-free reaction mixture initially comprising a bacterial cell extract; a template for production of the polynucleotides; monomers for the polynucleotides and polypeptide to be synthesized, and such co-factors, enzymes and other reagents that are necessary for the synthesis; the method comprising:

synthesizing said polynucleotides and polypeptides in a cell-free reaction mixture modified to include:

at least 10 mM of a phosphate-free energy source; nucleoside monophosphates in the absence of exogenous nucleoside triphosphates; and exogenous phosphate at a concentration of from about 1 mM to about 20 mM wherein said phosphate is provided as potassium phosphate, magnesium phosphate, or ammonium phosphate.

7-9. (canceled)

10. (previously presented) The method of Claim 1, wherein said synthesis comprises translation of mRNA to produce polypeptides.

11. (original) The method of Claim 10, wherein said synthesis also comprises transcription of mRNA from a DNA template.

12. (currently amended) The method of Claim 1 wherein said synthesis of biological macromolecules polynucleotides and/or polypeptides is performed as a batch reaction.

13. (currently amended) The method of Claim 1 wherein said synthesis of biological macromolecules polynucleotides and/or polypeptides is performed as a continuous reaction.

14. (original) The method of Claim 1, wherein said reaction mix comprises an extract from *E. coli* grown in glucose containing medium.

15. (original) The method of Claim 14, wherein said *E. coli* are grown in glucose and phosphate containing medium.

16. (original)The method of Claim 1, wherein said reaction mix comprises magnesium at a concentration of from about 5 mM to about 20 mM.

17. (original)The method of Claim 1, wherein said reaction mix is substantially free of polyethylene glycol.

18. (original) The method according to Claim 17, wherein said reaction mix comprises one or more of spermine, spermidine and putrescine.

19 (previously presented) The method of Claim 1, wherein the reaction mixture yields over 400 µg/mL of the synthesized polypeptide.